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Write your **student number** in the boxes above.

Letter

Agricultural and Horticultural Studies

Question and Answer Book

VCE Examination – Wednesday 13 November 2024

- Reading time is **15 minutes**: 9.00 am to 9.15 am
- Writing time is **1 hour 30 minutes**: 9.15 am to 10.45 am

Materials supplied

- Question and Answer Book of 20 pages

Instructions

- Answer **all** questions in the spaces provided.
- Write your responses in English.
- Use the additional space at the end of this book if you need extra space to complete an answer.

Students are **not** permitted to bring mobile phones and/or any unauthorised electronic devices into the examination room.

Contents

10 questions, 100 marks _____ pages 2–15

Question 1 (10 marks)

Drones are used in Australian agricultural and horticultural industries such as cotton, flower growing and livestock. Technological innovation allows farmers to manage many different aspects of their business.



Source: DJI-Agras/Pixabay

- a. Outline **one** impact that technological innovation, such as using drones, may have on people working in farming.

2 marks

- b. Outline **one** role that technological innovation, such as using drones, can have in increasing yield.

2 marks

Do not write in this area.

c. Discuss **two** ways in which technological innovation, such as using drones, can contribute to improved environmental sustainability.

6 marks

Question 2 (6 marks)

Describe two ways in which primary producers may find solutions to the challenge of food wastage. Provide an example for each.

1. _____

2. _____

Do not write in this area.

Question 3 (14 marks)

a. Explain two strategies to prevent footrot among farm animals.

6 marks

Strategy 1 _____

Strategy 2 _____

b. Describe one strength and one weakness for each strategy.

8 marks

Strength of strategy

Strategy 1 _____

Strategy 2 _____

Weakness of strategy

Strategy 1 _____

Strategy 2 _____

Do not write in this area.

Question 4 (8 marks)

- a. Outline **one** role that genetically modified organisms (GMOs) can play in the reduction of chemical use in the agricultural or horticultural industry.

2 marks

- b. Besides the reduction of chemical use, explain one argument **for** and one argument **against** the use of GMOs in food and/or fibre production.

6 marks

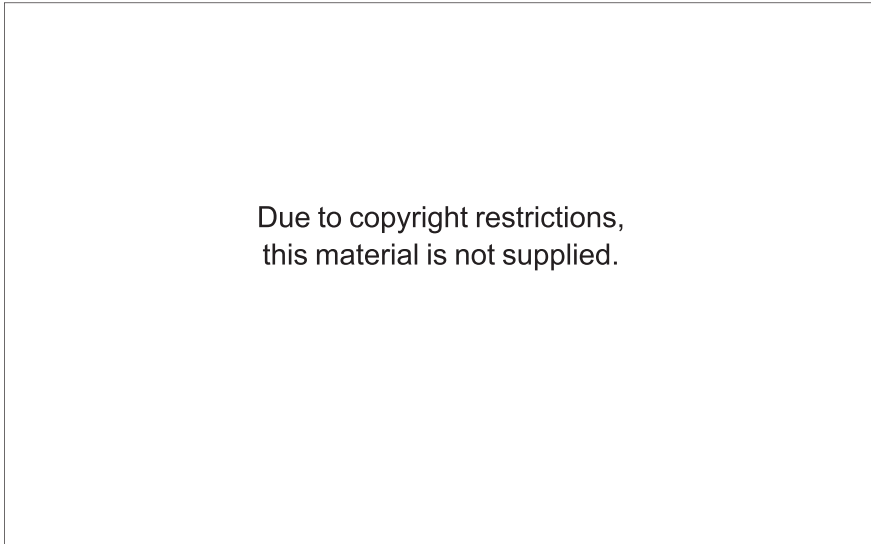
One argument **for** using GMOs _____

One argument **against** using GMOs _____

Do not write in this area.

Question 5 (12 marks)

Images in the media often show animal activists trespassing on farms, processing plants/abattoirs and livestock transport ships to capture images of animal cruelty that are confronting to the public and to farmers. Their actions influence both industry and government policies, supply chains and export markets, and they have social and economic impacts at the local, national and global levels.



Source: C Hamlett, 'Intensive animal farming can lower pandemic risk? Maybe, but we still shouldn't support it', *Surge*, <surgeactivism.org>

- a. Describe **one** biosecurity risk associated with trespassing on farms, processing plants/abattoirs or livestock transport ships.

2 marks

- b. Describe two economic implications that a biosecurity breach might have on the local or export market.

4 marks

Implication 1 _____

Implication 2 _____

Do not write in this area.

Question 6 (10 marks)

a. Explain **two** principles of sustainable land management.

4 marks

b. Read the following text and answer the question below.

A farmer operates a sustainable cattle and chicken farm, producing beef and eggs. The farmer strip grazes cattle in the paddocks, moving cattle daily onto fresh pasture by using temporary electric fencing. The advantage of this system of farming is that it concentrates the cattle urine and manure onto a small area. The cattle also eat all the pasture and do not selectively graze just the most palatable grasses.

Once the cattle are moved on, they are followed into the strip by chickens, which actively scratch at the cow manure and eat the insects that have been attracted to the manure. The action of the chickens incorporates manure directly into the soil, fertilising and adding carbon to the depleted pasture. The farmer has never needed to fertilise the paddocks or drench the cattle, and has noticed that the pastures stay healthier and greener in summer than those on the surrounding properties.

Explain two reasons why the farm described above is an environmentally sustainable business.

6 marks

Reason 1 _____

Reason 2 _____

Do not write in this area.

Question 7 (10 marks)

Amy manages a lettuce-growing property and decides to sell some lettuces at a Melbourne wholesale market. Amy contacts a local transport company to move her produce to the market. Upon arrival at the property, the driver finds that the packing shed is dimly lit and contains a number of open chemical containers.

- a. State the appropriate state government legislation that applies to the above situation. 1 mark

- b. Explain two reasons why it is in Amy's best interests to improve lighting **and** to safely store her chemicals in the packing shed. 4 marks

Improve lighting _____

Safely store chemicals _____

- c. Discuss how compliance with state and federal government legislation influences the business practices of Australian agriculture and/or horticulture. Provide an example. 5 marks

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Question 8 (10 marks)

- a. List two types of soil degradation. 2 marks

Type 1 _____

Type 2 _____

- b. State the impact that **one** type of soil degradation can have on farm. 2 marks

- c. Propose two actions that a farmer could take to rehabilitate the soil after it has been degraded. 6 marks

Action 1 _____

Action 2 _____

Question 9 (10 marks)

- a. Value-adding is one strategy farmers can adopt to increase profitability.

Outline what value-adding is, and provide **one** example of how a farmer could employ this strategy.

2 marks

- b. The supply chain is an important part of moving food and fibre from paddock to plate.

Outline **two** components of the supply chain in the food and fibre industries.

2 marks

- c. The following quotations are taken from two organisations/movements that employ slow practices in their approach to agriculture and horticulture.

‘Slow Food is a global movement of local groups and activists united by the common goal of ensuring everyone has access to good, clean and fair food. Founded in Italy in 1986, we are now active in more than 160 countries.’

Source: Slow Food, ‘About us’, <slowfood.com>

‘Slow fashion is the opposite of fast fashion. It takes an ethical and sustainable approach to producing clothes.

The slow fashion movement is a direct response to the harmful impact of fast fashion on the environment and garment workers. It advocates for making fashion choices that are kinder to people and planet.’

Source: Oxfam, ‘What is Slow Fashion?’, <oxfam.org.uk/oxfam-in-action/oxfam-blog/what-is-slow-fashion>

Explain how carbon footprint reduction presents **one challenge** for sustainability across either the food or fibre supply chain.

3 marks

- d. Explain how carbon footprint reduction presents **one opportunity** for sustainability across either the food or fibre supply chain.

3 marks

Do not write in this area.

Question 10 (10 marks)

Hort Innovation Strategy 2024–2026

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this material is not supplied.

One of the priorities of the Horticulture Innovation Strategy 2024–2026 is to ‘drive consumption through high-impact, evidence-based domestic and export marketing campaigns’.

An example of this is how the Australian avocado industry has undertaken marketing campaigns to promote avocado consumption. These campaigns emphasise the health benefits and versatility of avocados in dishes like salads and smoothies. As a result, more people in Australia are now eating avocados, boosting demand for the locally grown product. Also, the Australian avocado industry is now exporting more avocados to meet global demand, showing that Australian avocados are top-quality produce.

Source: Adapted from Hort Innovation, ‘Hort Innovation Strategy 2024–2026’, <horticulture.com.au>

- a. Identify **one** way in which the Australian avocado industry’s marketing campaigns have effectively promoted avocado consumption domestically and/or internationally. 1 mark

- b. Describe **one** marketing tool that could be used to support the Australian avocado industry’s marketing campaigns. 3 marks

Do not write in this area.

c. Explain two ways in which a quality assurance program in Australia's food or fibre industries can support sustainability.

6 marks

1. _____

2. _____

Do not write in this area.

